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The Information Linkage Between Applied Mathematics and Industry, Second Annual Workshop

Monterey, California. Naval Postgraduate School

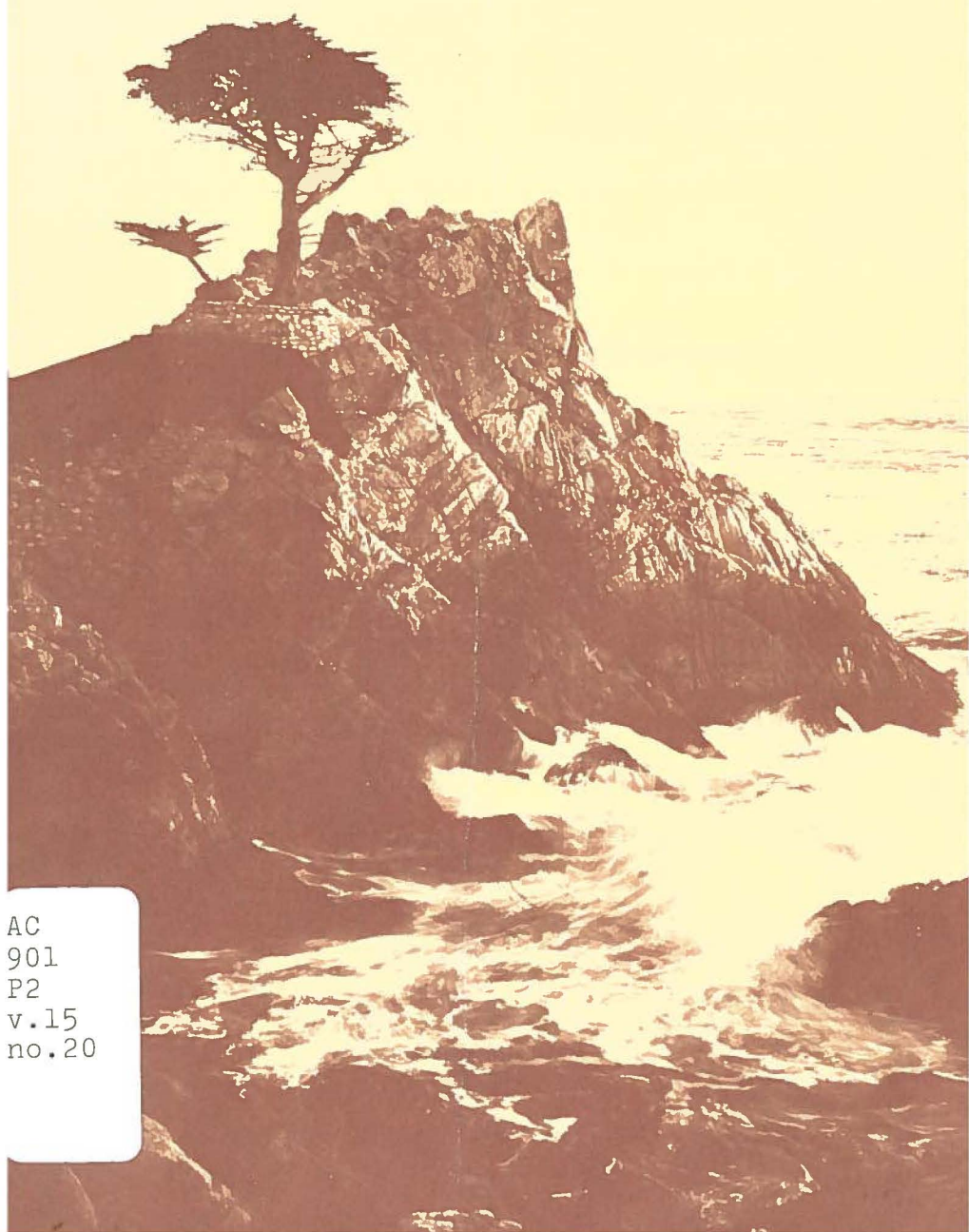
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NAVAL POSTGRADUATE SCHOOL
Monterey, California

THE INFORMATION LINKAGE BETWEEN
APPLIED MATHEMATICS AND INDUSTRY

Second Annual Workshop

February 22-24, 1979

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WORKSHOP OUTLINE

Wednesday 21 February	4:00 - 8:00 p.m.	Early Registration - Ingersoll Hall
Thursday 22 February	8:00 - 4:30 p.m.	Workshop Registration - Ingersoll Hall
	9:00 a.m.	Welcoming Remarks Jack R. Borsting, Provost, Naval Post-graduate School (NPS)
	9:15 a.m.	Invited Session on <u>Solution of Ill-Conditioned Systems</u> - Ingersoll 122 Speakers - Bert Rust (Union Carbide) W. Ross Burrus (Science Appl.)
	12:15 p.m.	Lunch Break
	1:15	Contributed Papers Sessions* Session IA - <i>Theory and Computation of Linear Systems</i> Session IB - <i>Least Squares, Regression and System Identification</i>
Friday 23 February	8:00 - 4:30 p.m.	Workshop Registration - Ingersoll Hall
	8:30 a.m.	Invited Session on <u>Robust Stability of Linear Systems</u> - Ingersoll 122 Speakers - Alan Laub (MIT) Gunter Stein (Honeywell)
	11:30 a.m.	Lunch Break
	1:00	Contributed Papers Sessions* Session IIA - <i>Applications in Controls</i> Session IIB - <i>General Applications</i>
Saturday 24 February	9:00 a.m.	Invited Session on <u>Fast Solution of Poisson's Equation</u> - Ingersoll 122 Speakers - Roland Sweet (NCAR, Univ. of Colorado) Thomas Rosmond (NEPRF)
	12:00 a.m.	Workshop Closes

*Details of Contributed Sessions inside

CONTRIBUTED PAPERS SESSION IA
Theory and Computation of Linear Systems

Thursday, 22 February 1979
Ingersoll 122
Chairman: Assoc. Prof. U. R. Kodres

- 1:15 p.m. Out of Core Gram-Schmidt Orthogonalization for Computers with Limited Capacity
James W. Longley - Bureau of Labor Statistics
- 1:35 An Improved Determination of the Characteristic Polynomial for the Standard Eigenvalue Problem
Richard W. Young - University of Cincinnati
- 1:55 Matrix Evaluation of Product-Type Quadrature Coefficients
Joseph F. McGrath - KMS Fusion, Inc.
- 2:15 Block Diagonalization of Ill-Conditioned Matrices
John Jones, Jr. - Air Force Institute of Technology
- 2:35 Break
- 2:45 Solving Algebraic Equations Exactly on ILLIAC IV
Morris Newman - UC, Santa Barbara
- 3:05 Applications of Exact Inversion of Arbitrarily Ill-Conditioned Matrices
Roy B. Leipnik, Morris Newman - UC, Santa Barbara
- 3:25 Displacement Ranks of Matrices and Linear Equations
Thomas Kailath, Martin Morf - Stanford
Sun-Yuan Kung, USC

CONTRIBUTED PAPERS SESSION IB
Least Squares, Regression and System Identification

Thursday, 22 February 1979
Ingersoll 322
Chairman: Professor L. V. Schmidt

- 1:15 p.m. A New Parallel Algorithm for Linear System Identification: Preliminary Results
J. Gary Reid, Donald P. Seyler - Air Force Institute of Technology
- 1:35 An Efficient Iterative Method for the Solution of Large, Constrained, Regularized Least-Squares Problems
Yair Censor, Arnold Lent - SUNY, Buffalo
Gabor T. Herman - Mayo Clinic
- 1:55 Aeromagnetic Compensation as a Linear Regression Problem
Barrie W. Leach - National Aeronautical Establishment, Canada
- 2:15 Calculation of Response Correlation Matrices for Aircraft Dynamical Systems Subjected to Three Dimensional Turbulence
Uy-Loi Ly - Boeing
- 2:35 Break
- 2:45 Linear Regression with Optimal +1,0,-1 Weights: Statistical and Computational Theory
Peter M. Bentler, J. A. Woodward - UCLA
- 3:05 Two Dimensional Power Series Approximation of Equation-of-State Surfaces
Horst P. Richter - Bechtel National, Inc.

CONTRIBUTED PAPERS SESSION IIA
Applications in Controls

Friday, 23 February 1979
Ingersoll 1-122

Chairman: Assoc. Prof. T. M. Houlihan

- 1:00 p.m. Solution of Certain Classes of Linear Time-Varying Systems
Min-Yen Wu - University of Colorado, Boulder
- 1:20 On the Application of Matrix Generalized Inverses to the Determination of Unknown Inputs of Linear Control Systems
V. Lovass-Nagy - Clarkson College of Technology
- 1:40 Decoupling and Reduced-Order Modeling of Two-Time Scale Control Systems
Leonard Anderson - Virginia Polytechnic Institute
- 2:00 Application of the Ricatti Equation to Finding Initial Values in Ill-Conditioned Control Systems
A. Shamaly, G. S. Christensen - University of Alberta
M. E. El-Hawary - Memorial University
- 2:20 Break
- 2:30 Computer Aided Formal Design of Linear Systems
Theodore Mairson - Sanders Associates
- 2:50 Global Behavior of a Class of Random Signal Generators
S. A. Ghazati - Queen's College
- 3:10 Linear System Model of a Class of Random Processes
S. A. Ghazati - Queen's College

CONTRIBUTED PAPERS SESSION IIB
General Applications

Friday, 23 February 1979
Ingersoll 322

Chairman: Adj. Prof. G. Acuirre-Ramirez

- 1:00 p.m. Two-D Digital Filtering Using Transforms Over Extensions of Finite Rings
David P. Maher - Worcester Polytechnic Institute
- 1:20 Generalized Tensors and Matrices
S. F. Borg - Stevens Institute of Technology
- 1:40 The Determination of Absorption Energy Distributions
P. H. Merz - Chevron Research Company
- 2:00 Approximation Algorithm Using Function and Derivative Values
Horst P. Richter - Bechtel National, Inc.
- 2:20 Break
- 2:30 Deconvolution of Spectral-Dependent Measurements
Horst P. Richter - Bechtel National, Inc.
- 2:50 COOP - A Comprehensive, General Purpose Software Tool
Horst W. Kriebel, Engineering Consultant
- 3:10 Analysis Programs for Solution of Linear Systems in Structural Applications
Chung-Yen Chiu - Brown and Caldwell Consulting Engineers

THE WORKSHOP COMMITTEE

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